Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of fabricating a radiation-emitting semiconductor chip based on AlGaInP, comprising the method steps of:

preparing a substrate[[(12)]];

applying to said substrate a semiconductor layer sequence comprising a photon-emitting active layer[[(22)]]; and

applying a transparent decoupling layer[[(16)]], ~~characterized in that~~ wherein

said substrate[[(12)]] is formed substantially of germanium and

said transparent decoupling layer[[(16)]] is applied in a temperature range extending no higher than 800°C.

2. (Currently Amended) The method as described in claim 1, ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] is applied with the use of tertiary butyl phosphine as a phosphorus source.

3. (Currently Amended) The method as described in claim 1[[or 2]], ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] is applied at a temperature below 780°C, preferably below 750°C.

4. (Currently Amended) The method as described in ~~one of the preceding claims~~ claim 1, ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] is applied at a temperature of about 700°C.

5. (Currently Amended) The method as described in ~~one of the preceding claims~~ claim 1, ~~characterized in that~~ wherein -said transparent decoupling layer[[(16)]] is applied with the use of trimethyl gallium as a gallium source.

6. (Currently Amended) The method as described in ~~one of the preceding claims~~ claim 1, ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] is grown by organometallic vapor-phase epitaxy (OMVPE).

7. (Currently Amended) The method as described in ~~at least one of claims 2 to 6~~ claim 2, ~~characterized in that~~ wherein said decoupling layer comprises $Ga_x(In_yAl_{1-y})_{1-x}P$ wherein $0.8 \leq x$ and $0 \leq y \leq 1$, particularly GaP.

8. (Currently Amended) The method as described in claim 6[[or 7]], ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] is grown with a V:III ratio of 5 to 20, preferably of about 10.

9. (Currently Amended) A radiation-emitting semiconductor chip based on AlGaInPm comprising:

a substrate[[(12)]];

a semiconductor layer sequence[[(14)]] applied to said substrate and comprising a photon-emitting active layer[[(22)]]; and

a transparent decoupling layer[[(16)]] disposed on said semiconductor layer sequence [[(14)]], ~~characterized in that~~ wherein said substrate[[(12)]] is formed of germanium.

10. (Currently Amended) The radiation-emitting semiconductor chip as described in claim 9, ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] comprises $Ga_x(In_yAl_{1-y})_{1-x}P$ wherein $0.8 \leq x$ and $0 \leq y \leq 1$, particularly GaP.

11. (Currently Amended) The radiation-emitting semiconductor chip as described in ~~at least one of claims 9 and 10~~ claim 9, ~~characterized in that~~ wherein said transparent decoupling layer[[(16)]] has a thickness of between about 1 μm and about 10 μm, particularly of between about 2 μm and about 10 μm.